New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010

Langdon Marsh
Acting Commissioner

Mr. Dale J. Carpenter
U.S. Environmental Protection Agency
Region II
Jacob K. Javits Federal Building
New York, NY 10278-0012

MAY 23 1994

Re: NWIRP-Bethpage
Site Number: 1-30-003B

Dear Mr. Carpenter:

This is a follow-up to our May 16, 1994 telephone conversation during which the topic of sampling of the recharge basins at the above-referenced site came up. The purpose of this letter is to lay out the facts surrounding this matter in hopes of resolving this matter once and for all.

The issue at hand is why the Department is not requiring that the U.S. Navy sample the soils beneath the recharge basins at the NWIRP site, while at the same time requiring that the Occidental Chemical Corporation (OCC) sample soils beneath Sump 2 at the Hooker/RUCO site. There are two fundamental differences between these two sites which must be considered in order to understand the positions taken by the Department.

First, the basins (sumps) of concern at the Hooker/RUCO site (Sumps 1 & 2) are currently inactive, whereas the three recharge basins at the NWIRP site are active. Process waste waters were pumped to these basins for a period of time in the past. Due to the fact that the basins at the NWIRP site are active, one would expect that most of the contaminants in the soils beneath the NWIRP basins would have been flushed into the aquifer by now. This is not the case at the Hooker/RUCO site.

A second fundamental difference between the two sites is the difference in the chemicals found at the sites. Many of the tentatively identified compounds (TICs) found at the Hooker/RUCO site are low molecular weight alcohols and glycols. The two groundwater treatment systems mentioned in the January 1994 Record of Decision for the Hooker/RUCO site probably will be ineffective in treating these compounds. The TICs found at the NWIRP site are higher molecular weight compounds that can be treated via carbon adsorption.

The remainder of this letter is divided into the following sections:

1 - Investigative Approach Used at the Two Sites
2 - Interpretation of the TIC Data
3 - Conclusions Drawn from the Investigations

1 - Investigative Approach Used at the Two Sites

There are two general methods of determining if a site, or a portion of a site, is a source of groundwater contamination. The first is a direct method during which an aggressive sampling

approach is employed. This is what the EPA did at the Hooker/RUCO site. Not only was the groundwater sampled at locations downgradient of potential sources but the potential sources were sampled. The NYSDEC chose to use an indirect methodology at the NWIRP and Grumman sites. The NYSDEC targeted potential source areas and had monitoring wells installed downgradient of these areas. The thought process behind this was that if contamination was found, then follow-up sampling would be conducted. In areas known to be sources, such as Site 1 at the NWIRP site, a direct approach similar to that used by the EPA at the Hooker/RUCO site was employed.

Both of the approaches used by our respective agencies are acceptable. The direct method is most suitable for smaller sites such as the Hooker/RUCO site, whereas the indirect approach is the best approach at larger sites such as the NWIRP and Grumman sites.

2 - Interpretation of the TIC Data

Many of the TICs found at the Hooker/RUCO site were low molecular weight alcohols and glycols, etc. which were used at the site. Waste waters from Plant 1 which contained these compounds were discharged into Sumps 1 and 2 for a period of almost 20 years leading up to 1975.

The total concentration of TICs at a monitoring well downgradient of these sumps totaled more than 5000 parts per billion (ppb), 50 times greater than the drinking water standard of 100 ppb. These compounds were also detected in the soils 19-21 and 27-29 feet below the bottom of Sump 1 at total concentrations over 6000 parts per million. These compounds were detected 9-11 feet below the bottom of Sumps 1 and 2 at significantly lower concentrations. No samples were collected below the 9-11-foot interval at Sump 2. The distribution of these compounds in the soils beneath Sump 1 is not surprising since almost 15 years had passed since the disposal practices ceased and the sampling was performed. We would expect to find a similar distribution of these compounds in the soils beneath Sump 2. This is why the Department has requested that OCC collect samples from the deeper soils beneath Sump 2.

Tentatively identified compounds were identified in the groundwater at the NWIRP site. The total concentrations of these compounds were an order or more in magnitude less than what was found in some the Hooker/RUCO wells. Also, the ratio of the TICs to VOCs was very different to that found at the Hooker/RUCO site.

At the NWIRP site, at least 41.5% of the TIC compounds which were not rejected by the laboratory can be attributable to nature, and quite likely to the Canadian Geese population which resides at the site year-around. Factoring out the laboratory rejected TICs and the natural compounds, the TIC concentrations by monitoring well are presented below:

WELL ID	TICs (ppb)
HN-24I	116
HN-24S	88
HN-25I	67 (duplicate - 8)
HN-25S	34
HN-26I	140
HN-26S	228
HN-27I	22
HN-27S	35
HN-28I	23

HN-28S	13
HN-29I	ND
HN-29S	102
HN-30I	82
HN-30S	127 (duplicate - 132, of which 74 match)
PW-10	ND
PW-11	8
PW-13	ND
PW-15	ND

There is another important issue which must be kept in mind and that is the fact that groundwater remediation will be conducted at the NWIRP site. It is envisioned that, at a minimum, a carbon treatment system will be used as a polishing unit. The TICs found at the NWIRP site are expected to be treatable by this method.

Only 14% of the TICs initially reported by the laboratory were unknowns. It would be very difficult to identify these compounds, especially considering the differences in the analyses of duplicate samples (see the results from HN-25I and HN-30S). The Department does not consider the identification of the unknowns to be critical.

The critical issue at the NWIRP site is that groundwater is contaminated with VOCs. With respect to the recharge basins, the monitoring wells of concern are HN-30S and GM-8S. A summary of the analytical data from these wells is presented below:

HN-30S:
VOCs : 2 ppb (1,1,1 TCA)
M^+ : none over standards
SVOCs: none detected
TICs : 489 ppb - 199 ppb rejected, 71 ppb unknown, 163 ppb natural compounds, 56 ppb miscellaneous

GM-8S:
VOCs : 2 ppb
M^+ : none over standards

The soil cleanup criteria used by the Department are presented in the Department's TAGM Number 4046. The cleanup values for VOCs and semi-volatile compounds (SVOCs) are based on the partitioning theory. These values are set such that any contamination which reaches the groundwater won't contaminate groundwater to levels exceeding standards. We do not consider the data presented above to be of concern, especially considering that these compounds will be removed from the aquifer during site remediation.

3 - Conclusions Drawn from the Investigations

Based on our review of the information outlined above, the soils beneath Sump 1, and possibly Sump 2, at the Hooker/RUCO site are continuing sources of significant groundwater contamination. These soils along with the affected groundwater need to be remediated.

Based on our review of the information outlined above, we have concluded that the recharge basins at the NWIRP site are not continuing sources of groundwater contamination. Therefore, there is no reason to sample the recharge basins at the NWIRP site except as an academic exercise.
It should be noted that these basins were a source of contamination, but with time, these contaminants

have been flushed into the aquifer.

I hope this letter helps you to understand this matter. If you still have questions regarding this matter, I strongly urge that you discuss this with one of your staff chemists or chemical engineers. A great deal of time has been spent by personnel from our respective agencies (as well as the Navy) discussing this matter, and as a result, some project schedules have slipped by as much as four to five months. There really was no difference in the investigative approaches used at these sites, and there is no reason for dragging this issue out anymore.

Very truly yours,

John D. Barnes, MSChE, P.E.
Environmental Engineer 2
Bur. of Eastern Rem. Action
Div. of Haz. Waste Remediation

cc:
S. Ervolina
S. McCormick
M. Chen
K. Gupta
K. Bologna
S. Bates (NYSDOH)
T. Vickerson (NYSDOH)
K. Lynch (EPA)
J. Colter (US Navy)
M. Logan (EPA)